EPCOS

# *SAW Components*

*Data Sheet B3863*

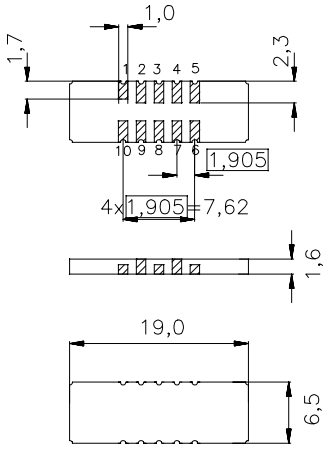
Ceramic package **DCC18**

### Features

- Low-loss IF filter for CDMA base station
- Temperature stable
- Ceramic SMD package
- Unbalanced or balanced operation

### Terminals

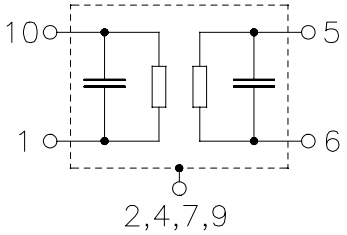
- Gold plated




Dimensions in mm, approx. weight 0,8 g

### Pin configuration

| | |
|---|---|
| 1 | Input or balanced input |
| 10 | Input ground or balanced input |
| 6 | Output or balanced output |
| 5 | Output ground or balanced output |
| 3, 8 | Ground |
| 2, 4, 7, 9 | Case ground |




| Type | Ordering code | Marking and Package according to | Packing according to |
|---|---|---|---|
| B3863 | B39730-B3863-U210 | C61157-A7-A54 | F61074-V8081-Z000 |

**E**lectrostatic **S**ensitive **D**evice (**ESD**)

### Maximum ratings

| | | | | |
|---|---|---|---|---|
| Operable temperature range | $T$ | –40 / +85 | ˚C | |
| Storage temperature range | $T_{stg}$ | –40 / +85 | ˚C | |
| DC voltage | $V_{DC}$ | 0 | V | |
| Source power | $P_s$ | 0 | dBm | |

## Characteristics

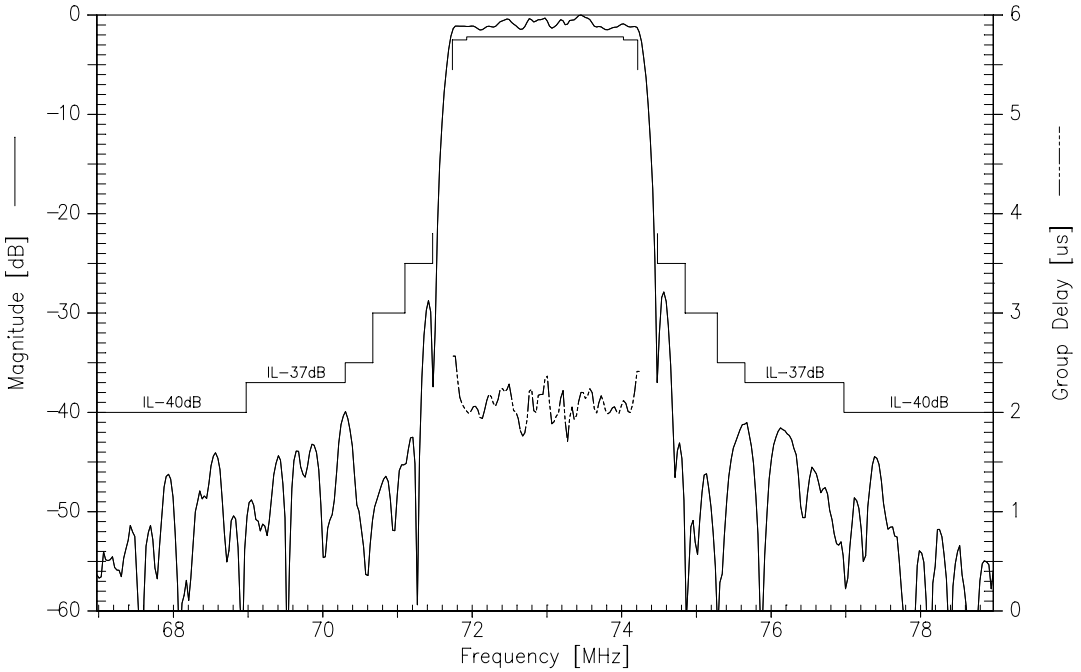
Operating temperature range: T = –40 to +85 °C
Terminating source impedance: $Z_S$ = 50 Ω and matching network
Terminating load impedance: $Z_L$ = 50 Ω and matching network

| | | | min. | typ. | max. | |
|---|---|---|---|---|---|---|
| **Nominal frequency** | | $f_N$ | — | 72,9746 | — | MHz |
| **Minimum insertion attenuation** | | $\alpha_N$ | — | 22,0 | 24,0 | dB |
| **2,5 dB bandwidth** | $\alpha_{rel}$ ≤2,5 dB | $B_{2,5dB}$ | 2,48 | 2,54 | — | MHz |
| **Amplitude ripple** (p-p) | $f_N \pm 1{,}05$ MHz | $\Delta\alpha$ | — | 1,7 | 2,2 | dB |
| **Integrated phase error** (rms) | $f_N \pm 1{,}24$ MHz | $\Delta\varphi$ | — | 3,4 | 4,0 | deg |
| **Phase linearity** (p-p) | $f_N \pm 1{,}24$ MHz | $\Delta\varphi$ | — | 15,5 | 18,0 | deg |
| **Group delay ripple** (p-p) | $f_N \pm 1{,}05$ MHz | $\Delta\tau$ | — | 650 | 800 | ns |
| **Return loss** | $f_N \pm 1{,}05$ MHz | | — | 10 | — | dB |
| **Relative attenuation** (relative to $\alpha_N$) | | $\alpha_{rel}$ | | | | |
| 0 MHz ... $f_N - 6{,}0$ MHz | | | 45 | 60 | — | dB |
| $f_N \pm 1{,}505$ MHz ... $f_N \pm 1{,}875$ MHz | | | 25[1] | 28 | — | dB |
| $f_N \pm 1{,}875$ MHz ... $f_N \pm 2{,}305$ MHz | | | 30 | 45 | — | dB |
| $f_N \pm 2{,}305$ MHz ... $f_N \pm 2{,}675$ MHz | | | 35 | 41 | — | dB |
| $f_N \pm 2{,}675$ MHz ... $f_N \pm 4{,}0$ MHz | | | 37 | 40 | — | dB |
| $f_N \pm 4{,}0$ MHz ... $f_N \pm 6{,}0$ MHz | | | 40 | 44 | — | dB |
| $f_N + 6{,}0$ MHz ... 150 MHz | | | 45 | 60 | — | dB |
| **Input 3rd-order intercept point** | | *IIP3* | 40 | — | — | dBm |
| **Temperature coefficient of frequency** [2] | | $TC_f$ | — | –0,036 | — | ppm/K² |
| **Turnover temperature** | | $T_0$ | — | 30,0 | — | °C |

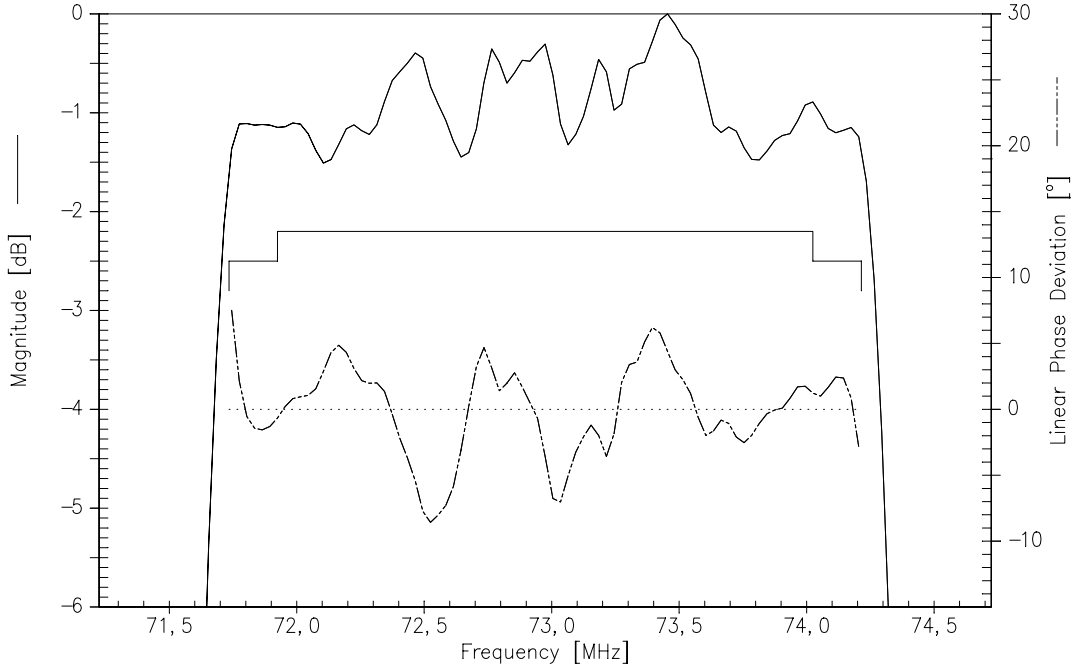
[1] 26 dB for temperatures greater than -25°C

[2] Temperature dependance of $f_c$: $f_c(T_A) = f_c(T_0)(1 + TC_f(T_A - T_0)^2)$

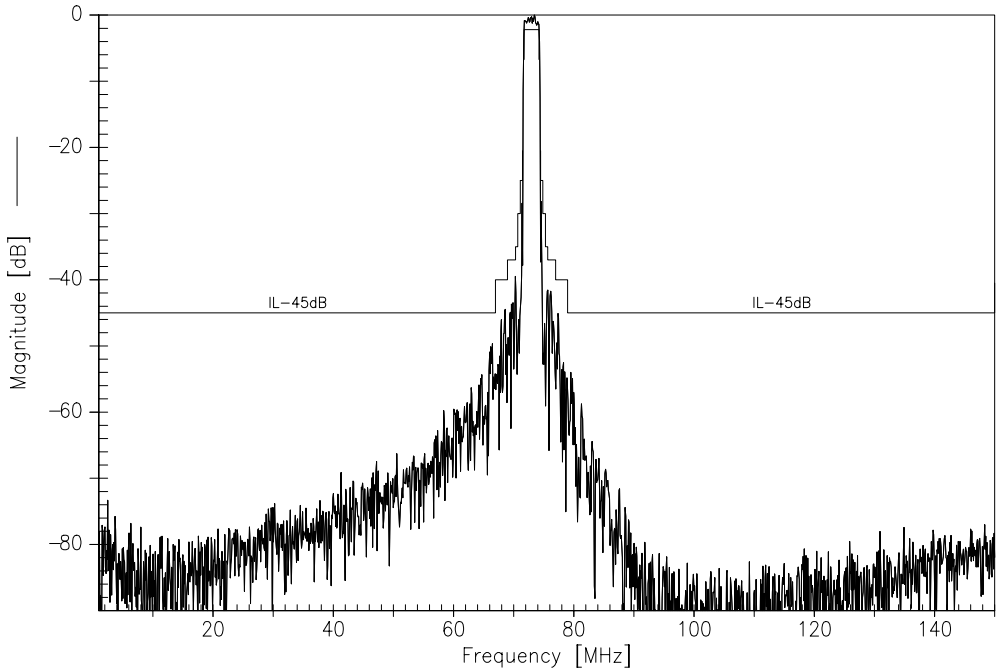
**Normalized frequency response**



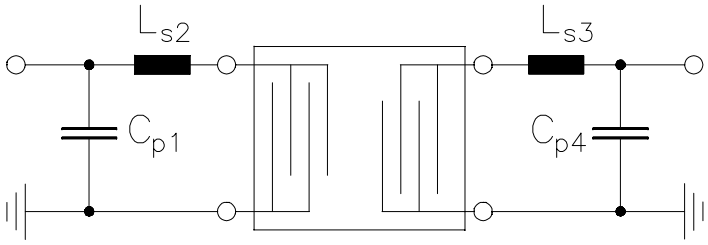

**Normalized frequency response** (passband)



**Normalized frequency response** (wideband)




**Test Matching Network to 50Ω** (element values depend on PCB layout)




$C_{p1}$ = 47 pF
$L_{s2}$ = 470 nH || 1,2 pF || 1,2 pF
$L_{s3}$ = 330 nH || 2,2 pF || 2,7 pF
$C_{p4}$ = 100 pF

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